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(54) **Locking gully gratings or manhole covers**

(57) A cover such as a gully grating 2, shown hinged at 7 in a frame 1, is provided with a spring catch comprising a depending "U" shaped spring 8-9 engageable under a frame abutment 10. The spring catch may be integral with or bolted on to the cover, and is released by inserting a bar or other tool into a frame aperture adjacent the abutment 10.

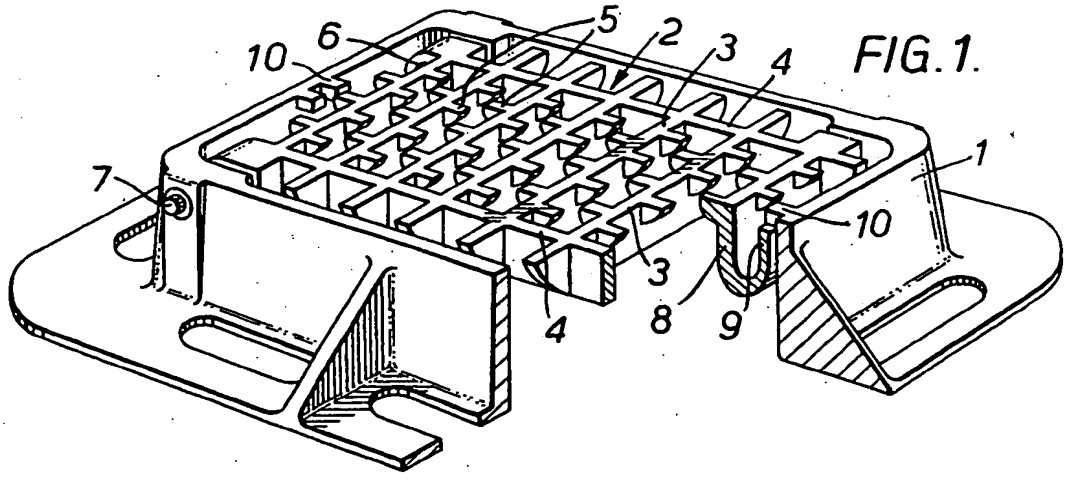

FIG.1.

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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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FIG.1.

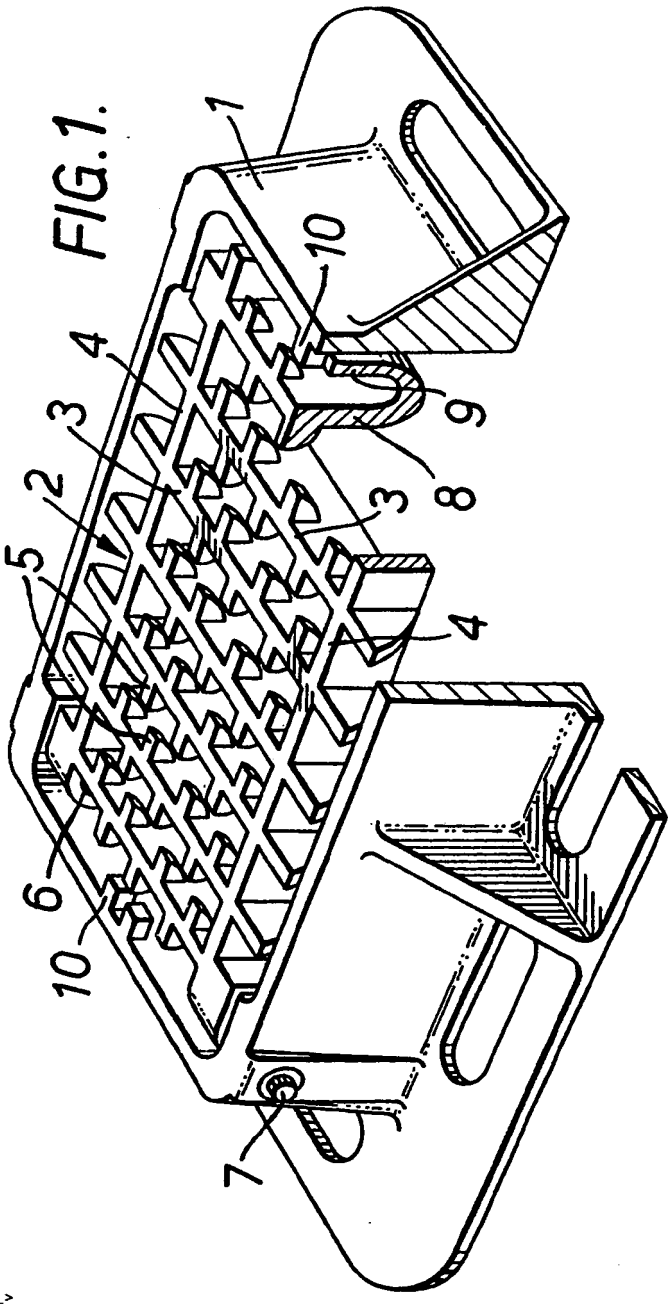


FIG.4.

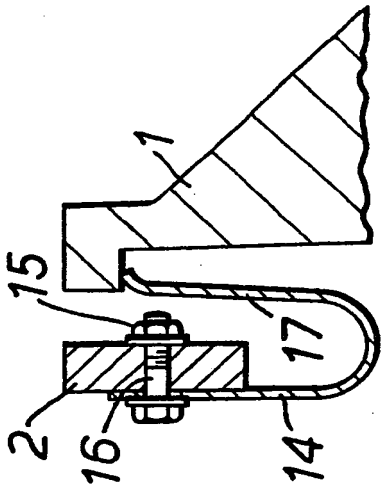


FIG.2.

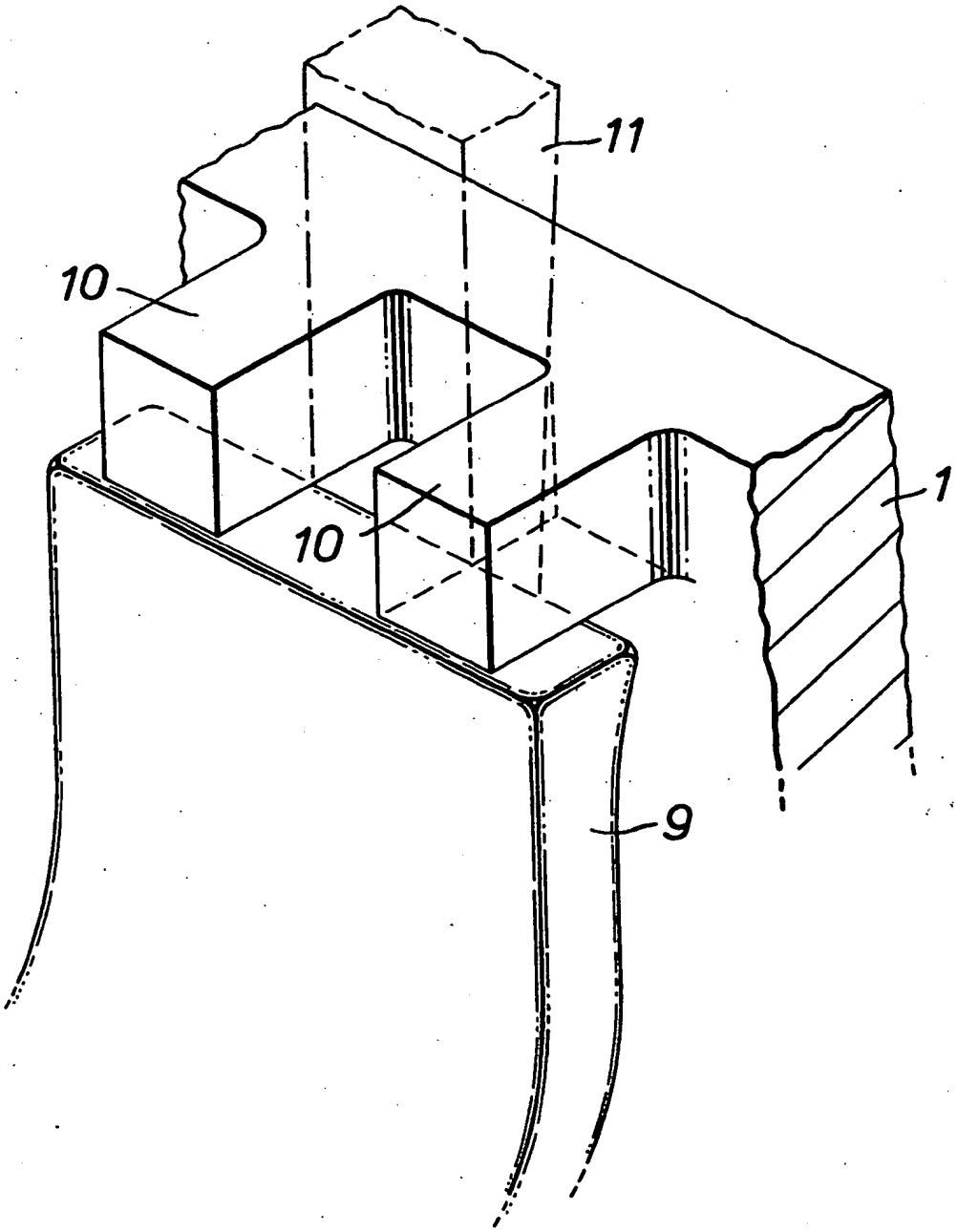


FIG.5.

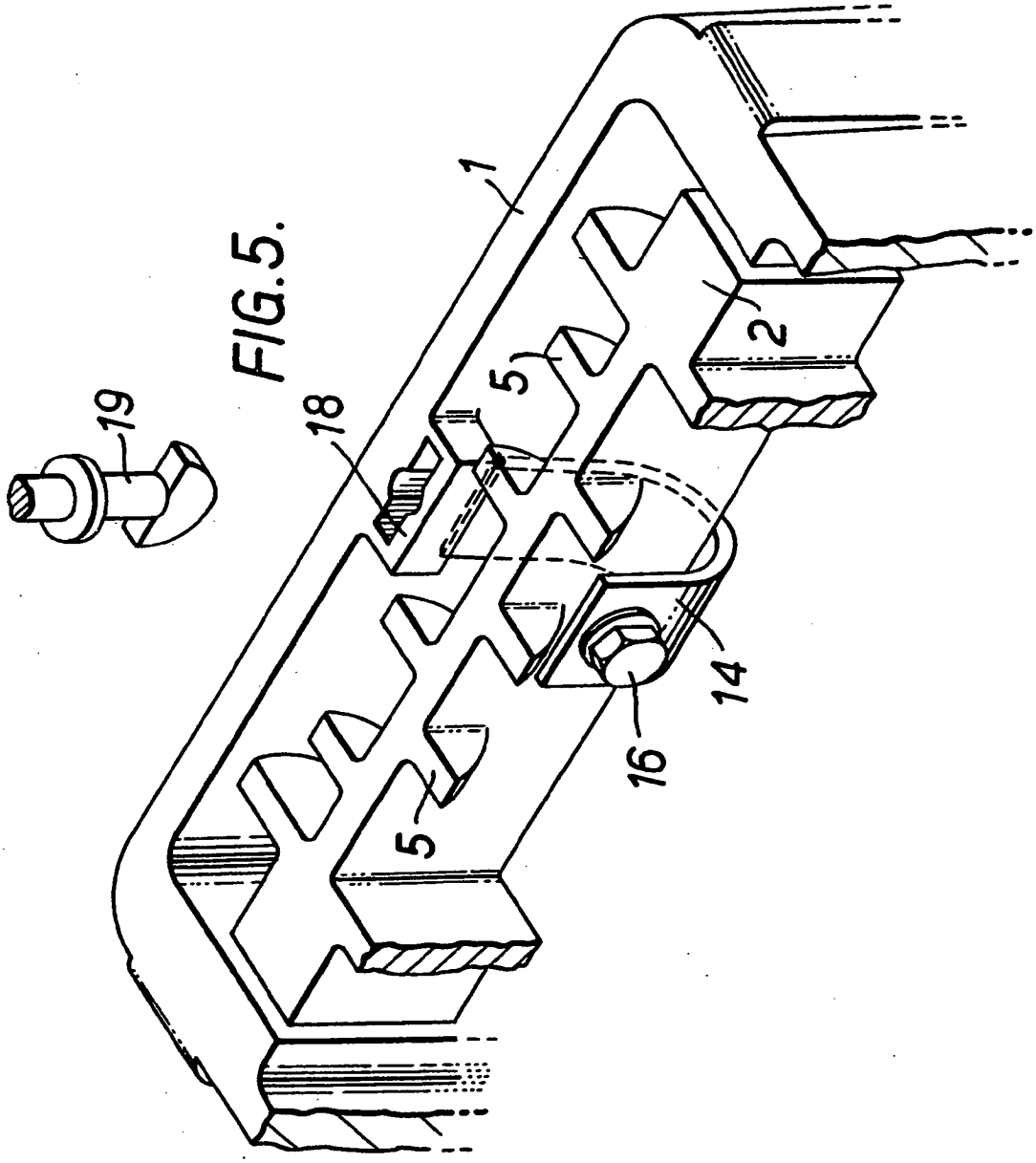
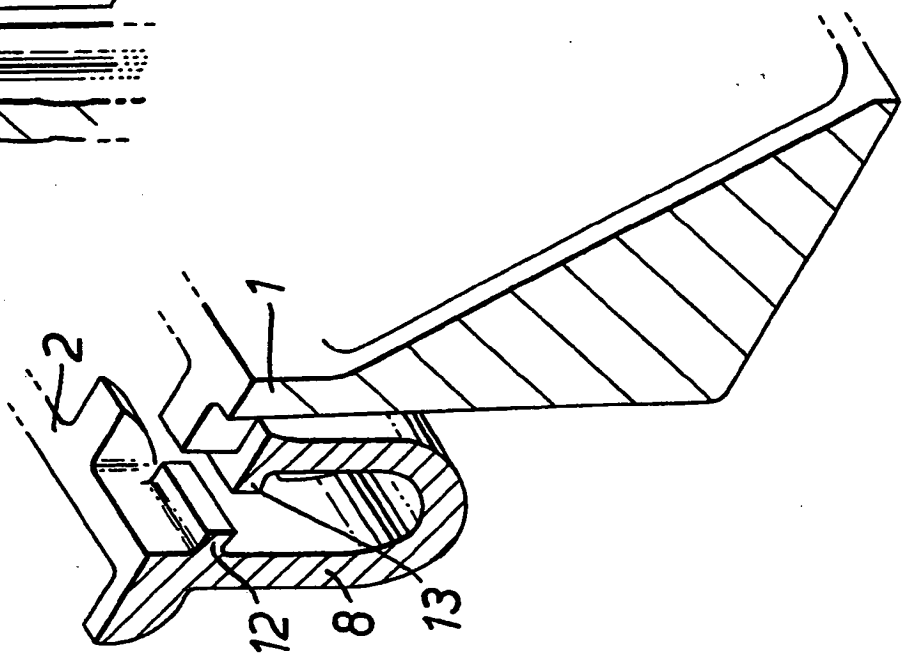


FIG.3.



SPECIFICATION

Improvements in or relating to gully and manhole assemblies

This invention relates to gully and manhole assemblies within which expression as used herein is included frame and gully grid assemblies for road and pavement drains and frame and cover assemblies for road and pavement openings for sewers, drains, wiring pits and conduits for example.

With such assemblies it is a desirable requirement in some circumstances that they be sufficiently secure to prevent the gully grid or cover being raised or removed easily by unauthorised persons, but that they be easily and quickly removable by authorised persons.

It is an object of the present invention to provide an arrangement which meets this requirement.

According to the invention there is provided a gully or manhole assembly including a frame and at least one gully grid or cover mounted on the frame, the gully grid or cover being provided with at least one resilient "U" shaped spring member depending by one arm thereof from one edge of the gully grid or cover, the other arm of the "U" shaped member outwardly extending free from the gully grid or cover and being adapted in locked use to engage with an abutment provided on the frame and being movable against its spring force towards the gully grid or cover to disengage from said abutment.

Usually movement of "U" shaped member to disengagement is provided by means of an external tool such as a key or lever.

The arrangement may be such that as the gully grid or cover is placed in position in the frame, the "U" shaped resilient member automatically springs into position with the said other arm thereof engaging with said abutment.

The gully grid or cover may be hingedly mounted on the frame in which case the "U" shaped resiliently member may conveniently be located on an edge of the gully grid or cover remote from the hinge mounting.

The upper edge of said other arm of the "U" shaped member may be lower than but approach the level of the upper surface of the frame and/or the gully grid or cover.

The "U" shaped member may be formed integrally with gully grid or cover. Alternatively, the "U" shaped member may be formed separately and attached to the edge of the gully grid.

In order that the invention may be more readily understood embodiments thereof will now be described by way of example with reference to the accompanying drawings in which:-

Figure 1 is a cut away isometric view of a gully assembly according to the invention;

Figure 2 is a scrap view of part of the assembly of Figure 1 showing the frame abutment and free arm of the "U" shaped member;

Figure 3 is a scrap view of part of a similar assembly to the assembly of Figure 1 showing a variant to the "U" shaped member;

Figure 4 is a section through part of another assembly showing another variant to the "U" shaped member; and

Figure 5 is an isometric view of part of the assembly of Figure 4.

Referring to Figures 1 and 2 it will be seen that the gully assembly includes a generally rectangular frame 1 for seating in the roadway usually in a gutter adjacent to a pavement. The frame is cast from ductile iron. It is provided with a generally rectangular opening within which is located a ductile iron gully grid 2. The grid is comprised of a plurality of parallel bars 3 linked by two cross-bars 4 adjacent each side. Each of the parallel bars 3 is provided with a plurality of side abutments 5 on each side thereof to prevent for example the wheels of perambulators catching in the slots between the parallel bars 3.

One end of the grid 2 is provided with a socket 6 at each side adapted to receive a hinge pin 7 secured to the frame correspondingly at each end. By this means the grid 2 may be hinged open and shut.

At the end remote from the hinges the grid 2 is provided with an integral "U" shaped spring member 8 depending by one arm from the edge of the grid 2. The spring member 8 owes its resilience to its formation from ductile iron. The upper end of the free arm 9 of the "U" shaped member is disposed a little below the level of the upper surface of the grid 2 and engages, in the locked position of the assembly shown in Figure 1, with and below a forked abutment 10 on the inner wall of the frame 1.

It is to be observed that forked abutments 10 are provided at each end of the frame 1 and similarly positions for hinge pins so that hinging and locking can take place at either end of the frame.

Disengagement of the free arm 9 of the "U" shaped member from the abutment 10 of the frame 1 can be accomplished, as shown in Figure 2, by means of a lever 11 (shown in chain dotted lines) inserted in the fork abutment and forcing the arm 9 against its resilient spring force towards the grid 1 whereby the grid may be lifted.

As hereinabove described, in the assembly of Figures 1 and 2 the "U" shaped member 8 is cast from ductile iron integrally with the grid 2. In Figure 3 is illustrated a form "U" shaped member 8 in which this can be achieved most easily. Lips 12 and 13 are located on the member 8 and are remnants of a web cast with the member 8 and grid 2 and then cut out.

Figures 4 and 5 illustrate another form of "U" shaped member. In this case a "U" spring of steel 14 is secured by means of nut 15 and bolt 16 to the edge of the grid 2 so that its free arm 17 engages an abutment 18 on frame 1. It is to be noted that in this instance the abutment 18 is not forked but is apertured so as to be able to receive a key 19 which, after passing through the apertured abutment 18 may be turned to compress the spring member 14 towards the grid 2 so that the grid 2 may be raised.

By means of the embodiments of the invention illustrated there is provided a gully assembly easily and securely lockable but which can be released and opened readily and quickly with the appropriate tool.

CLAIMS

1. A gully or manhole assembly including a frame and at least one gully grid or cover mounted on the frame, the gully grid or cover being provided with at least one resilient "U" shaped spring member depending by one arm thereof from one edge of the gully grid or cover, the other arm of the "U" shaped member outwardly extending free from the gully grid or cover and being adapted in locked use to engage with an abutment provided on the frame and being moveable against its spring force towards the gully grid or cover to disengage from said abutment.

2. An assembly according to Claim 1 wherein movement of the "U" shaped member is provided by means of an external tool.

3. An assembly according to Claim 2 wherein the abutment has a vertical slot to provide access for the external tool.

4. An assembly according to Claim 1, 2 or 3 wherein the arrangement is such that upon placement of the grid or cover in position in the frame, the "U" shaped member automatically springs into a position with said other arm thereof engaging with said abutment.

5. An assembly according to Claim 1, 2, 3 or 4 wherein the grid or cover is hingedly mounted at one side on the frame.

6. An assembly according to Claim 5 wherein the "U" shaped resilient member is located on an edge of the grid or cover remote from the hinge mounting.

7. An assembly according to any one of the preceding claims wherein the upper edge of said other arm of the "U" shaped member is lower than the level of the upper surface of the frame and/or the grid or cover.

8. An assembly according to any one of the preceding claims wherein the "U" shaped member is formed integrally with the grid or cover.

9. An assembly according to any one of claims 1 to 7 wherein the "U" shaped member is formed separately from the grid or cover and attached to an edge thereof.

10. A gully or manhole assembly substantially as shown in and as hereinbefore described with reference to Figures 1 and 2 or Figure 3 or Figures 4 and 5 of the accompanying drawings.

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